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Jason 1 nears December launch

Mike Davis, left, Jason 1 launch vehicle engineer, and Tom Shain, logistics and operations engineer, are helping to prepare the satellite for its Dec. 7 launch.

the EARTH



Photo by Scott Michel

TESTING OF THE ONBOARD INSTRUMENTS AND control systems for Jason 1 satellite have been successfully completed. All multi-layer insulation, or thermal blankets, are installed and secured for flight. Jason 1 is now in its flight configuration, set for a Dec. 7 launch from Vandenberg Air Force Base in California.

Jason 1 is the first follow-on to the highly successful Topex/Poseidon mission, which has been flying since 1992. Topex/Poseidon measured ocean surface topography to an accuracy of 4.2 centimeters (1.7 inches), enabled scientists to forecast the 1997-1998 El Niño, and improved understanding of ocean circulation and its effect on global climate.

A few weeks after launch, Jason 1 will raise itself into the same orbital altitude as Topex/Poseidon's—1,337 kilometers (830 miles)—then will move in close behind its predecessor, trailing by about 500 kilometers (300 miles).

Topex/Poseidon and Jason 1 will fly in line together, making nearly simultaneous measurements. The science team will compare the data to make sure the instruments are calibrated exactly. This procedure is expected to take about six months, after which Jason 1 will assume Topex/Poseidon's former flight path and the older satellite will move into a parallel ground track midway between two Jason 1 ground tracks.

Weighing 500 kilograms (about 1,100 pounds), Jason 1 is one-fifth the size of Topex/Poseidon. Jason 1 will complete an orbit around Earth approximately every 112 minutes. While Jason 1's mission is designed to last three years, it carries enough propellant for five years.

The mission is a joint project between NASA and the French space agency Centre National d'Etudes Spatiales (CNES). Following launch, initial checkout will be performed by CNES in France, then operations will be transferred to JPL. The project manager is Gary Kunstmann.

Jason 1 carries five instruments: the Poseidon 2 altimeter, the spacecraft's main instrument, to measure altitude; a microwave radiometer to measure atmospheric water vapor; and three precision location-finding instruments. Jason 1 altimeter data will be part of a suite of data provided by other JPL-managed ocean missions—the Grace mission will use two satellites to accurately measure Earth's mass distribution, and the QuikScat scatterometer mission will measure ocean-surface winds.

For images, animations and other information on the mission, log on to <http://topex-www.jpl.nasa.gov/mission/jason-1.html>.

Study shows fault moving faster than expected

By Enrico Piazza

Scientists at JPL and UCLA have concluded that earthquake fault zones in California's eastern Mojave Desert are moving in different ways than they expected.

For years researchers were aware that movement in the southern California shear zone was distributed over a 100-kilometer-wide (60-mile) area. However, they assumed that deep below the surface the Blackwater Little Lake and the Garlock faults were creeping steadily, something that the new study seems to contradict.

A paper with the findings is in the Nov. 1 issue of the journal *Geology*.

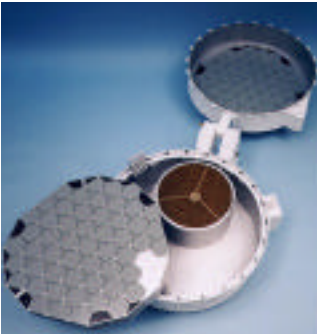
"The most exciting thing is we discovered something we didn't expect. We were looking for deformation on the Garlock fault, but we saw in the image a concentration of shear along the Blackwater Little Lake fault, which cuts the Garlock fault at a right angle," said Dr. Gilles Peltzer, a UCLA professor and JPL research scientist who is the lead author of the study. "Radar interferometry has been applied previously to the study of earthquakes, and what we are imaging here is the surface strain field produced by the slow creep occurring at depth on active faults between earthquakes."

The new findings indicate that more than half of the right-lateral motion of the Eastern California shear zone is sharply concentrated along the Blackwater Little Lake fault system. The rapid strain accumulation observed along the fault system indicates that the fault is building up stress in the shallow crust at a rate three times faster than the rate inferred from geological observations. This may be the manifestation of stress transfer between the Garlock fault and other faults in the Mojave area, in particular those that produced the magnitude 7.3 Landers earthquake in 1992 and the magnitude 7.8 Owens Valley earthquake in 1872.

Scientists arrived at the conclusion after studying radar interferometry data collected by satellites over the last eight years.

Genesis prepares for science mission

By Martha Heil



Genesis' sample-return capsules.

the SOLAR SYSTEM

The JPL-managed Genesis spacecraft, launched on Aug. 8, will soon arrive into orbit around its destination—Lagrange 1, a point in space between Earth and the Sun. The spacecraft is now preparing to begin its science mission on Nov. 16.

Project managers are monitoring the temperature of the battery inside Genesis' sample-return capsule to make sure that long-term heating does not impair its performance when the capsule returns samples of the solar wind to Earth in September 2004. Although the battery is likely to become hotter than originally expected, the flight team has a number of options for managing the battery's temperature, and they do not expect the issue to affect the mission.

The mission's science requirements call for 22 months of solar

wind particle collection. "In our current plan, Genesis will meet and exceed that goal, collecting up to 26 months' worth of solar wind particles," said Project Manager Chet Sasaki of JPL.

The temperature of the lithium-dioxide battery is currently at 23 degrees Celsius (73 degrees Fahrenheit), within the range anticipated by spacecraft designers. A radiator device intended to shield the battery is not working as well as expected, however, and the battery is likely to heat up to 42 degrees Celsius (108 degrees Fahrenheit). Mission managers consider this temperature to be within acceptable limits. They note that similar batteries have been maintained at 60 degrees Celsius (140 degrees Fahrenheit) for 15 months without impairing their perfor-

mance. Ground tests are being conducted on lithium batteries to measure their durability at various temperatures.

The Genesis project team has been attempting to bake potential contaminants off the battery's radiator by heating the area. They are doing this with the spacecraft's sample return backshell opened just enough to allow gas trapped inside the capsule to escape, while still avoiding exposure to the Sun.

Following arrival into orbit around the Lagrange 1 point, Genesis will deploy its collector arrays in early December and begin collecting particles of the solar wind that will imbed themselves in specially designed high purity wafers.

For more information, go online to <http://genesismission.jpl.nasa.gov>.

News
Briefs



Kathryn Weld

Weld receives legislative honor

KATHRYN WELD, manager of the Mission Systems Engineering Section 314 has received a commendation from the California state legislature. State Senator JACK SCOTT and Assembly members CAROL LIU and DARIO FROMMER presented Weld with a 2001 Women in Business certificate of recognition in a mid-October ceremony that honored the achievements of 20 women statewide. Weld was honored in the “Women in Science and Technology” category. Other Women in Business awards bestowed by the legislature include Most Inspirational, Community Service, Empowerment and Businesswoman of the Year (small business and corporate categories). Weld has been the manager of the Mission Systems Engineering Section since 1998. The section, with 180 engineers and support staff, supports many of JPL’s planetary and Earth science projects in post-launch operations. The section also leads the pre-launch systems engineering and development of the Mission Operations System for future missions such as the Space Infrared Telescope Facility, Space Interferometry Mission, Mars Exploration Rover and Mars Reconnaissance Orbiter and Gravity Recovery and Climate Experiment.

Williamson wins new JPL award

The Engineering and Science Directorate last month presented RICHARD WILLIAMSON of Section 344 with JPL’s first Contract Technical Manager of the Year Award. A 34-year JPL veteran, Williamson received a certificate of recognition and a bonus. He is currently project element manager/procurement lead for \$150 million of contract work on the Mars Exploration Rover. Williamson previously worked on the X2000 project. With the Mars Exploration Rover program, he has implemented a standardized set of contract documentation. “People recognize Rich for his exemplary reputation to address complex development problems with tight schedules,” noted R. LLOYD KEITH, manager of Section 344. Williamson is also involved as a mentor to less experienced contract technical managers as part of an ongoing series of four-day workshops.

Vision test for robotic eye doctor

A five-minute vision test developed by a JPL physicist and using a laptop computer with a touch-sensitive screen can be used on Earth and in space to help diagnose the onset of eye diseases and even certain types of brain tumors. With one eye covered, a person sits in front of a computer screen divided into a grid. The subject stares at a central spot on the touch-sensitive

screen and, using a finger, outlines missing areas of the grid. The computer records, processes and displays a 3-D image of the subject’s visual field. The test for each eye takes about four to five minutes. “As NASA moves forward to establish a permanent presence in space, this may be considered a breakthrough step for the creation of an autonomous onboard physician,” said DR. WOLF-GANG FINK, senior member of the technical staff. “It is a non-invasive, quick and easy process that gives astronauts and physicians on the ground an almost instant auto-diagnosis. This type of technology will be useful for long-term space missions where early detection and advance monitoring will be key to the health of the astronauts.” Fink, a visiting research assistant professor of ophthalmology at USC, developed the test as part of his post-doctoral research while at Caltech with colleague Dr. ALFREDO SADUN, professor of ophthalmology at USC. This tool has been undergoing testing in clinical trials that began last year at the Doheny Eye Institute, Keck School of Medicine at USC. Trial results show that the screening test helps detect a variety of eye conditions, such as glaucoma and macular degeneration, the two leading causes of blindness. Early detection of these conditions and appropriate treatment are crucial in preventing further loss of sight. Caltech has filed a full patent on the screening test, and several companies have expressed interest in licensing the technology that may become commercially available as early as next year. Future uses envisioned are: monitoring the effects of intracranial pressure elevation in low-gravity environments and evaluation of possible stroke onset and of acute and chronic stroke conditions. Funding for this project was through a grant from the National Science Foundation, Arlington, Va.

Honor Awards nominations open

Nominations are now being accepted for the 2002 NASA Honor Awards, which recognize individuals and teams who make outstanding contributions to the NASA mission. JPL employees are invited to nominate individuals or groups for this award. Nominations should be submitted to the cognizant line manager of the nominated person or team. Award criteria, categories and nomination forms are available from the Employee Services and Recognition home page at <http://eis/sec614/reward> by clicking on NASA Honor Awards. Each “Director for” will schedule his/her internal process to ensure that the directorate’s final recommended nominations will be submitted to MONICA GARCIA, mail stop T1720-B, by Wednesday, Nov. 21.

SIRTF science center dedicated

Caltech has dedicated the Space Infrared Telescope Facility (SIRTF) Science Center on campus. The Science Center will be responsible for all aspects of the science operation for the observatory.

The JPL-managed SIRTF, scheduled for launch in July 2002, is an infrared telescope that will study the early universe, young galaxies and forming stars, and will detect dust discs around stars, considered an important signpost of planetary formation. SIRTF will be the last of NASA’s four “Great Observatories” that are designed to crack the mysteries of the cosmos. SIRTF will join the Hubble Space Telescope and the Chandra X-Ray Observatory in space. Each of these observatories looks at different kinds of light along the electromagnetic spectrum, which ranges from the visible to the infrared.

The SIRTF observatory will fill an important gap in wavelength coverage—the thermal infrared—that is not available from ground-based observatories. By seeking this infrared light, SIRTF will be looking for such objects as brown dwarfs and super planets, along with newly born planetary systems that may exist around other stars in our Milky Way galaxy. For more information about SIRTF, visit <http://sirtf.caltech.edu>.

Special Events Calendar

Ongoing Support Groups

Alcoholics Anonymous—Call the Employee Assistance Program at ext. 4-3680 for meeting time and location.

Codependents Anonymous—Meeting at noon every Wednesday. Call Occupational Health Services at ext. 4-3319.

Gay, Lesbian and Bisexual Support Group—Meets the first and third Fridays of the month at noon in Building 111-117. Call the Employee Assistance Program at ext. 4-3680 or Randy Herrera at ext. 3-0664.

Parent Support Group—Meets the third Thursday of the month at noon. For location, call the Employee Assistance Program at ext. 4-3680.

Senior Caregivers Support Group—Meets the first Tuesday of the month at noon. For location, call the Employee Assistance Program at ext. 4-3680.

Sat., Nov. 10–Sun., Nov. 11

The Notebook of Trigorin—Tennessee Williams’ adaptation of Chekov’s *The Sea Gull* will be presented by Theater Arts at Caltech at 2 p.m. in Dabney Lounge. Admission price is to be determined. Call (626) 395-4652.

Monday, November 12

Caltech Ballroom Dance Club—The second in a five-week series of samba classes will be held from 7:30 to 9 p.m. in Winnett Lounge, followed by a half-hour practice session. Cost: \$8 per lesson. Contact Megan Knight at knight@its.caltech.edu or visit <http://www.its.caltech.edu/~ballroom>.

Caltech Management Association—JPL Deputy Director Eugene Tattini will present “An Illinois General in King Charles’ Court: Perspectives on Technology Management” at 4:45 p.m. in von Kármán Auditorium. Tattini will review past and current technology management practices of the Department of Defense, give his impression of the appropriateness of current NASA and JPL management practices, and compare JPL and Department of Defense practices. Tattini will also suggest areas in which he believes JPL management techniques could be improved. For Caltech Management Association membership (\$10 per year for JPL and Caltech personnel) information, call Priscilla Frascchetti at ext. 4-4964.



Tuesday, November 13

Blood Drive—Held in von Kármán Auditorium from 10 a.m. to 4 p.m. Sign-up sheets are available at Occupational Health Services (Building 310-202) and online at http://eis/medical/blood_form.html. Last-minute signups will be taken at von Kármán at your preferred time (be prepared to wait a little longer). To change an appointment, call the Pasadena Red Cross at (626) 960-6956, ext. 224.

JPL Stamp Club—Meeting at noon in Building 183-328.

Wednesday, November 14

Blood Drive—Held in von Kármán Auditorium from 7 a.m. to 1 p.m. See Nov. 13 listing for more details.

Caltech Ballroom Dance Club—The second in a five-week series of amateur-taught waltz classes will be held from 7:30 to 9 p.m. in Winnett Lounge. Cost: \$1 per lesson. Contact Megan Knight at knight@its.caltech.edu.

JPL Amateur Radio Club—Meeting at noon in Building 238-543.

JPL Toastmasters Club—Meeting at 5 p.m. Guests welcome. Call Joy Hodges at ext. 4-7041 for location.

“The Quantum-Classical Transition on Trial: Is the Whole More Than the Sum of the Parts?”—Dr. Hideo Mabuchi, assistant professor of physics at Caltech, will give a free lecture at 8 p.m. in Caltech’s Beckman Auditorium. For information, call (626) 395-4652.

Thursday, November 15

Caltech Architectural Tour—The Caltech Women’s Club presents this free service, which is open to the public. The tour begins at 11 a.m. and lasts about 1 1/2 hours. Meet at the Athenaeum front hall, 551 S. Hill St. Call Susan Lee at (626) 395-6327.

Native American Heritage Month—“Last of the Dogmen,” starring Tom Berenger and Barbara Hershey, will be shown at 5 p.m. in von Kármán Auditorium. In this western/fantasy, a Montana bounty hunter discovers a Native American mystery in the wilderness. Rated PG.

Parent Support Group—Steve Degelsmith of the Employee Assistance Program will speak on “Managing Holiday Stress” at noon in the 167-111 Wellness room.

Social Security—A representative is available from 9:30 to 11:30 a.m. in the 167 cafeteria. No appointment is needed.

Saturday, November 17

Caltech Concert Band—A free concert will be performed at 8 p.m. in Caltech’s Beckman Auditorium. The program will include music of Gershwin, Sousa and Beethoven. For information, call (626) 395-4652.

Sat., Nov. 17–Sun., Nov. 18

The Notebook of Trigorin—Tennessee Williams’ adaptation of Chekov’s *The Sea Gull* will be presented by Theater Arts at Caltech at 2 p.m. in Dabney Lounge. Admission price is to be determined. For information, call (626) 395-4652.

Monday, November 19

Caltech Ballroom Dance Club—The third in a five-week series of samba classes will be held from 7:30 to 9 p.m. in Winnett Lounge, followed by a half-hour practice session. Cost: \$8 per lesson. Contact Megan Knight at knight@its.caltech.edu or visit <http://www.its.caltech.edu/~ballroom>.

Native American Heritage Month—Tony Hull of Section 387 will present “A Navajo Solstice Site in Chaco Canyon, NM: rock art, ethnography and observation,” at noon in von Kármán Auditorium. The talk will describe an ongoing survey in a remote part of Chaco Canyon, a World Heritage Site. Slides will be presented on the survey, the site, and show a winter solstice sunrise event, suggestive of previously undocumented Navajo calendric use of rock art. Hull is co-investigator at this New Mexico site, and is also does field work and analysis in California with the UCLA Rock Art Archives. For information, call Vena Pontiac at ext. 3-2637.

Tuesday, November 20

A Conversation With John Hume—The co-winner of the 1998 Nobel Peace Prize for his efforts to find a peaceful solution to the conflict in Northern Ireland will lecture at 8 p.m. in Caltech’s Beckman Auditorium. Admission is free. Call (626) 395-4652.

JPL Hiking+ Club—Meeting at noon in Building 238-543.

Wednesday, November 21

Caltech Ballroom Dance Club—The third in a five-week series of amateur-taught waltz classes will be held from 7:30 to 9 p.m. in Winnett Lounge. Cost: \$1 per lesson. Contact Megan Knight at knight@its.caltech.edu.



Photo by Herb Shoelbridge / Caltech

From left: JPL Director Dr. Charles Elachi; Dr. Thomas Soifer, SIRTF Science Center director; Caltech President Dr. David Baltimore; and Dr. Edward Weiler, associate administrator for NASA’s Office of Space Science, dedicate the new facility.

Tattini settles in as Lab's new deputy director

GENERALLY SPEAKING

By Mark Whalen



This summer, JPL welcomed Air Force Lt. Gen. Eugene Tattini as its new deputy director. Before joining the Lab, Tattini led one of the United States' largest organizations responsible for developing and fielding military space missions. He spoke with Universe about his first impressions of the Lab.

YOU were involved most recently with managing launch systems and satellites. What attracted you to JPL?

I've been in military space in one assignment or another for almost 15 years, including three assignments at the Los Angeles Air Force Base, Space and Missile Systems Center in El Segundo. There I got exposed to the civil space program, which is NASA, and to the commercial space program, which is mostly telecommunications. So I've been able to keep abreast of who the industry leaders are. And, I have always known that in terms of technology and high-quality engineering and science, JPL has always been at the forefront.

I knew several Air Force reserve officers who worked at JPL. I also had a friend who was a contractor here at the Lab. So the more I talked to folks about JPL, the more interested I got in the job.

I consider myself very fortunate to have been selected as the deputy director. This is a job that comes open only once or twice a decade.

You've been at JPL for about four months now. How is your orientation going? What has impressed you the most?

During my first 90 days, about half the time was spent with Larry Dumas, and while I feel that I'm certainly a long way from understanding everything that goes on here, I'm beginning to relate to the organization's objectives and the management structure. And I'll become even more comfortable as time goes on.

What impresses me the most is the difficulty of projects we take on at JPL. They're both technically and programmatically hard, and to a lesser degree politically difficult as well. The fact that we are doing these missions in-house is something that I was not used to. In the military we were engineering and program managers, while here at JPL we're not only engineering and program managers, we're also the designers and builders. That has really impressed me.

The caliber and enthusiasm of the people here are even higher than what I expected.

How exciting was it for you to witness the success of Mars Odyssey's orbit insertion last month?

It's hard to put in words the feeling of absolute joy you experience when the creativity, engineering excellence and dedication of hundreds of people come together in exactly the right way. Just being in the Mission Support Area and watching our team react to their success was a privilege for me.

What is your impression of the Lab's facilities?

I'm a long way from having been in every building yet. But from what I've seen, some of our facilities are fantastic. And we have a new building under construction, and another in the planning stages. But at the same time, we have some "high-tech" labs in some very old facilities. That's why some of my emphases will be on housekeeping and good safety practices.

How will your strengths and experience best benefit the Lab? Have you been able yet to formulate some short-term goals?

My background is in program management and business; I'm not a graduate engineer. I know that I will be working closely with Tom Gavin (Associate Director, Flight Projects and Mission Success) and his group, and will help Charles and Tom streamline things like project management, cost effectiveness and acquisition, and make them work more effectively.

I also have a goal to make the institution run smoothly and unburden people from worrying about a lot of "administrivia"—so they can concentrate on their primary missions, and what they get paid to concentrate on.

The deputy director's job has been described as JPL's "general manager" or "chief operating officer." How do you see your role—as more of a manager or a leader?

Traditionally, the deputy director has been "Mr. Inside," while the director has been "Mr. Outside." However, Charles has asked me to do more external relations—with NASA Headquarters, with JPL's non-NASA customers such as the Department of Defense, including the Defense Advanced Research Projects Agency (DARPA), and other federal defense agencies.

I shared a joke with Dr. Elachi: he's going to teach me a little bit about science, I'm going to teach him a little bit about how to be a general, and we're going to make a great team.

Are there major differences in the way the military and NASA/JPL manage their budgets?

In many respects it's the same. We both go through the Office of Management and Budget and the congressional committees. There's the friendly competition among the NASA centers, depending on what their missions are; it's the same with the Air Force and our competition with the other branches of the military. But at the same time, how we execute those dollars is considerably different. We are more streamlined here at JPL than at the Pentagon.

Our challenge will be how we continue to pursue excellence with the money that NASA Headquarters gives us.

Since Sept. 11, JPL staff have been on a heightened state of alert. How would you assess the efforts to make the Lab more secure?

I have been in the forefront with our security and facilities people since the unfortunate incidents, to try to achieve the proper balance between taking care of the safety and security of our workforce and allowing employees enough flexibility to do their job as effectively and efficiently as possible. We've been experimenting with it, and have received a lot of good suggestions from the workforce.

My hat goes off to (Security and Protective Services Office Manager) Joe Charles and all of the Wackenhut personnel who provide security. They, along with our facilities and fire department staff, have done an absolutely outstanding job.

Eric Fuller, the emergency preparedness administrator, also helped the effort on Sept. 11 by getting our emergency operations center up and running, and getting the Lab's emergency response team organized very quickly.

From what you've observed, what is the Lab's outlook for the near future?

When the JPL strategic plan is rolled out early next year it will give all of us a good idea of where Dr. Elachi wants the Lab to go in the next half-decade. It is a good vision; we've worked hard at that plan and have included many people's ideas from throughout the scientific and engineering communities.

Are you enjoying the job so far?

I'm having a ball; I haven't regretted for one second the decision I made in coming here. But I've often wondered what the people here at JPL think of me—at the end of the day, that's what really matters.

PHOTOS BY DON DIONISI / JPL / ILLUSTRATION



Classified ads will be available the day before Universe is published, at

http://dailyplanet

JPL's online news source

View this and previous issues of Universe online

http://universe.jpl.nasa.gov

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Notice to Advertisers

Advertising is available for JPL and Caltech employees, contractors and retirees and their families. No more than two ads of up to 60 words each will be published for each advertiser. Items may be combined within one submission. Ads must be submitted on ad cards, available at the ERC and the Universe office, Bldg. 186-118, or via e-mail to universe@jpl.nasa.gov. Ads are due at 2 p.m. on the Monday after publication for the following issue.

All housing and vehicle advertisements require that the qualifying person(s) placing the ad be listed as an owner on the ownership documents.

Passings

DR. MICKEY ALPER, 71, retired manager of the Institutional Computing and Information Services Office 170, died of cancer Oct. 11.

Alper joined JPL in 1955 as a senior engineer in the Structures and Dynamics Research Group. He later became supervisor of that group, followed by a number of increasingly responsible management positions at the Lab. Beginning in 1976, Alper managed JPL's Solar Energy Program for nine years. He was named ICIS manager in 1988, and served in that role through 1994. Alper worked on the Director's Office staff through his retirement in 1996.

Alper is survived by his wife, Marcia, four children and two grandchildren. Services were held at Mount Sinai Memorial Park in Burbank.



Dr. Mickey Alper

Letters

Thanks to all our friends and colleagues at JPL for the support, words of encouragement and prayers during the recent passing of our father. Your thoughtfulness and kindness is very much appreciated. Thanks to ERC for the beautiful plants.

Cory Stevens and Mary Kunstler

Thanks for the wonderful send-off retirement party and the nice gift. JPL has been a great place to work for me and my family and I remain very enthusiastic about JPL's future. I will miss my many friends and am grateful for their support over the years.

Sverre Eng, Division 34

My family and I would like to thank all my friends and coworkers for their support and sympathy on the recent death of my father.

Charles Budney

I would like to thank my friends in JPL and my co-workers in the Transmitter Engineering Group for their expression of sympathy over the recent illness and passing of my father. My thanks also to the ERC for the beautiful plant sent to our home.

Yakov Vodonos

A note of thanks to all who shared in my retirement festivities . . . before, during and after the fact. You provided me many wonderful send-offs, especially the late-afternoon get-together at Mijares. It was a very special event for me and I will always remember what a great time we had. I cherish the many valued friendships I've enjoyed across the years and look forward to continuing them during my "Retiree" years. My gratitude and best wishes to you all.

Nancy Short

Classifieds

For Sale

BASEBALL CARD COLLECTION, 150K or more, 300 + Nolan Ryan, posters, balls, \$1,000/obo; WOOD STOVE, antique 'artic', \$600/obo. 626/285-3066.

BEDROOM SET, girl's, in white and pink wood, 7 matching pieces, stacking bunk beds, 5-drawer chest, desk, hutch, chair and 2 mattresses, very good cond., one owner, originally from Kid's Room, whole set \$450/obo. 790-9772.

BIKES, men's Diamondback Apex mtn. bike, 20" frame, 21-speed, \$50; women's Diamondback hybrid, 18-speed, \$40; SOFA, slip-covered sofa, exc. cond., \$75. 626/794-8720, Andy or Lisa.

BLOCK SALE, several homes in the 2100 blk. of Oakdale St., Pasadena 91107 (south of Del Mar - btw. Allen & S. Madre Blvd.) will be offering artifacts from their homes and garages in various stages of arrested decay, 9 - 4 p.m., Sat. Nov. 10. 626/795-5235.

CHINA CABINET, 1950s Drexel mahogany, e-mail for photo lelson@altavista.com, \$600 cash and carry. 353-9367.

COOLERS, Coleman, two, 25" x 36", gd cond., \$15/ea.; SHOVELS, 6, compact, sq.

point, \$5/ea.; FIREPLACE SCREEN/ accessories, black, \$50/all; CARPET SHAMPOOER, manual brush & handle, never used, \$5. 626/357-8210.

DAYBED w/trundle unit, white metal frame w/porcelain knobs, used 1 year, pastel plaid bedspread, 2 king shams, sheet set and 2 curtain valances, mattresses not included, \$199/all. 626/447-1888.

DESK, wood, executive style, 60 x 34, 3 drawers on right, 2 on left, locking center drawer, \$75/obo. 323/256-0445.

DINING TABLE, w/6 matching chairs, rectangular temper glass top, smoke color, chairs, contemporary style, \$55; SOFA & MATCHING CHAIR, light color fabric, no stains, well-maintained, contemporary style, bonus 2 free coffees, \$100. 626/688-7334.

DRYER, Kenmore, 7 years old, works great, \$100. 626/447-6423.

EXERCISE MACHINE, Ab Rocker, Body by Jake, \$25. 626/398-4960.

EXERCISER, Sharper Image Health Rider, exc. cond., \$175. 790-4860.

GATE, wrought iron, painted black, 1.5 yr. old, 4-ft wide, 7-ft tall, curved top, with 9 in-side vertical bars spaced 4", comes with standard lock, hinge bar and locking bar, \$80/obo. 626/791-6101.

GITAR, Martin 00016, Auditorium model, original owner, immaculate condition, hard shell case, solid spruce top, bracing 1/4" scalloped, hand carved, back & sides are solid mahogany, fingerboard and bridge are East Indian rosewood, 25.4" scale length, \$875/firm. 626/688-7400.

HIGH CHAIR, Graco Neat Seat, adjustable high chair, \$35; BED, Sealy Posturpedic queen mattress/box spring w/bed frame, \$150; BEDDING, bed skirt, comforter, Euro shams, \$40. 626/355-1245.

PAINT, 12 gallons, SWD brand #1929, 100% Acrylic elastomeric roof coating/paint, color is white, extra heavy, industrial duty and quality, super high hide paint, excellent for all uses but formulated specifically for outdoor roof, wall, etc coverage, fresh in unopened, sealed pails, excess from current project, \$150/obo. 249-3633.

PERSONAL ORGANIZER/accessories: Handspring Visor Deluxe, used <10 hours, \$129; CAMERA, for Visor, used 1X, half price, \$55; screen protectors, plastic, to protect visor from scratches, 10 for \$9.99; back up expansion card, never used, \$29; deluxe metal stylus, multi colored, metal, stylus for visor or palm, pack of 10, \$9.99; leather case, new deluxe, for palm or visor, \$19.99; extra cradle, for visor, \$19.99. 366-6134.

PHOTOGRAPHIC DRY MOUNTING PRESS, for permanently mounting black and white and color prints onto photo mounting boards, Technal Mdl 550, handles any size prints thru 16" x 20", using dry mounting tissue, Seal Tac Iron included, works perfectly, \$135. 909/624-6970.

PLANTS, two purple Wisteria trees in 5-gal plastic pots, \$15/each/obo. 626/791-6101.

PUPPIES, half Lab/Golden Retriever mix, half Dalmatian, 4 black, 7 black and white with spots, both long and short hair, \$25/ea. 626/448-5957.

PRINTER, HP, 5L, laser printer, good cond., \$25/obo. 626/794-8720, Andy or Lisa.

REFRIGERATOR, 7 yrs. old, Sears Kenmore, 22 cu. ft., frost-free, top freezer, beige, w/ice maker, 33 W x 66 H x 31 D, \$250; SOFA BED, Krause, custom queen, w/soft colors, beige, seafoam and rose, innerspring mattress, \$300; CRIB, Ragazzi, convertible to toddler bed, natural wood with sapphire trim, mattress, matching changing table, attaches to dresser top (dresser not included), \$300. 895-1714 or universe@siryl.com.

REFRIGERATORS, G.E., one is beige, 17 yrs. old, side by side, \$100, other is white, 15 yrs. old, \$100; DINING ROOM TABLE, with leaf, cherry wood tops, black legs, good cond., \$150; SOFA/SLEEPER, makes into queen size bed, abstract black, blue and mauve design, good cond., \$300; BICYCLES, four, children's, \$15/ea. 626/357-8210.

TABLE, drafting, full size commercial, with 1 filing drawing, 2 small drawers and a long drawer for drawings, steel construction and has a good surface, comes with drafting arm \$50. 909/283-3910.

TENT, great for hunters and fishermen, 3-man, 9 x 9 x 7 ft., heavy duty canvas, rain and snow proof, very good cond., \$225 value, sell \$65; SPEAKER CABINET, very large, 30 x 21 x 17 inches, 4.5 cu. ft., finished blond wood, with 12-inch JB Lansing speaker, \$40. 626/793-1895.

VACUUM CLEANER, Prolux/Electrolux, heavy duty; w/long, heavy-gage cord and bags, \$100. 626/398-4960.

WASHING MACHINE, Magic Chef brand, white, 20-lb. capacity, 3 wash speeds, 8 wash cycles, perfect cond., \$80. 626/688-7334.

WEDDING GOWN, Mori Lee designer, scalloped neckline, short capped sleeve, satin bodice overlaid w/lace & re-embroidered appliques, trimmed with sequins, pearls, deep V-back meets satin bow at waist, no train, purch. late 2000, worn once, clean, sz. 12, fits 5'8", picture at <http://www.morileeinc.com/catalog/C2001S5pix1.html>, \$199/obo. 241-3779.

Vehicles/Accessories

'01 CHEVROLET Suburban LS, 9K mi., full power, leather, moonroof, OnStar, MSRP \$40K, T.O.P. of \$649 / 65 mo. 626/398-8679, eves.

'90 CHEVROLET Lumina minivan, 8 passenger, red w/gray interior, interior in great shape, good running cond., tinted windows, \$2,500/obo. 626/794-4921.

'98 DODGE Stratus, 58K mi., new tires, vg cond., clean, am/fm, cassette, auto, a/c, \$10,000. 626/303-5174, Joe.

'00 FORD Explorer XLT, white w/gray leather interior, V6, automatic, new tires (2K mi.),

20K mi., all power, running boards, tow package, luggage rack, 6-disc changer, AM/FM/ cass./CD in-dash, moon roof, reverse sensing system, power front buckets, 5 yr./60K warranty, \$25K. 562/938-8983.

'00 FORD Mustang GT convertible, silver with black leather interior, loaded, 17-inch wheels, V8, 55,000 mi., mostly freeway, exc. cond., \$20,000/obo. 429-9026.

'95 FORD Windstar LX, loaded including quad captain's chairs and rear air, 78,000 mi., runs great, \$9,800. 626/447-6423.

'92 GMC Suburban 1500, 4 w/d, tow package, a/c, am/fm/cassette, CD player, phone, new tires, well maintained, body/interior in good cond., \$9,900/obo. 626/799-3587.

'96 HOLIDAY Rambler Endeavor LE RV, gas model, Ford chassis, 460 c.i., 34' 6" long, leather driver/passenger seats, rearview TV, dual ducted roof a/c, cultured marble counter tops, 19" color TV LR & 13" color TV BR, 13' slide-out dining room/living room, 8 cu. ft. refrigerator, 2-way gas/electric, 1 cu ft microwave, VCR switch box for front/rear TV, 7.0 KW Onan generator, 15,000 miles, 4SRL637, \$56,500. 626/797-9103.

'97 HONDA Accord EX coupe, 2 dr., automatic, 4-cyl, 2.2. liter Vtec, 73,200 miles, dk. grn., tan interior, a/c, ps, pw, pdl, tilt whl, cruise control, am/fm, cd, dual air bags, ABS (4-wheel), power seat, sliding sun roof, alloy wheels, fun car, exc. cond., \$11,895/obo. 909/305-1111, Victoria.

'97 JETSKI, Tigershark package, 2 & 3 seater, Ziemann trailer with storage box, all accessories, low hours, garage stored, purch. new in 1999, davis26@attglobal.net for photos, \$8,195/obo. 909/340-0736.

'97 NISSAN Altima, black cherry, 49K mi., good cond., regular oil and maintenance, orig. owner, AM/FM cassette, air, good tires, tilt wheel, cruise control, pwr. windows, \$7,500/obo. 626/359-0076, Evora.

'91 NISSAN Maxima, 124,000 mi., orig. owner, never in an accident, great mechanical condition, new battery, very reliable transportation, \$3,700/obo. 310/474-0619.

'89 NISSAN King Cab, power windows/locks/ mirrors, air, 133K freeway mi., alloy wheels, \$3,400. 843-5984.

'93 PONTIAC TransAm, 5.7 L, V8, LT1, 6-spd. manual, burgundy, full power, cruise, a/c, am/fm cass., 103K mi., exc. cond., \$6,500/obo. 395-4131 or 626/927-3323, Elsa/Austyn.

'97 TOYOTA Avalon XLS, maroon, w/tan leather interior, 4 dr., automatic, loaded, power windows, doors, moonroof, etc., exc. cond., \$19,990/obo. 985-2510.

'92 TOYOTA Corolla, good cond., well-maintained, 4-speed, am/fm radio, a/c, 110K miles, \$3,200. 562/402-4870.

'91 TOYOTA Camry Wagon Deluxe, V6, exc. cond. in and out, auto, a/c, orig. owner, \$4,700/obo. 548-5656.

'87 TOYOTA Corolla FX, hatchback, 106,000, new engine & transmission, new upholstery, very good cond., Hertz 1st owner, I'm the 2nd, complete records available, \$2,000. 626/793-2246 or lord_91106@yahoo.com.

'87 TOYOTA Corolla, 2-door sedan, a/c, sunroof, power steering, tilt wheel, cruise, w/four brand new Michelin tires, single owner, perfect running condition, \$1,500/obo. 626/794-4921.

'00 VW Jetta, like new, must sell, silver, 5 speed, power everything, keyless entry with alarm, cruise control, moon roof, premium sound-8 speakers, dual air bags, new ABS brakes, new tires, \$16,500. 661/273-4074, Joy or Steve.

'86 VOLVO 240 DL wagon, gold, 2.4L engine, new auto. trans., Aircro, AM/FM stereo, power lock, new electrical wiring, new tires, recent tune-up, well maint., reliable for family and outdoors, \$2,500/obo. 626/796-0639.

Wanted

ANTIQUe LINENS, white on white, hand embroidered, preferably monogrammed (any monogram), must be in exc. cond. 980-1638.

BABYSITTER, part time, for a 3-year-old boy in Altadena, one day a week, mother with child OK. 626/791-0585, Ulvi or Ayse, eves.

CHILD CARE, after school, homework help for 3rd and 4th grader, plus light housekeeping; in La Crescenta; some local driving also needed. 249-1583 Terri.

FALLEN TREES, for firewood, La Crescenta, La Canada, Tujunga. 353-9367.

HOST FAMILIES for Caltech international students for Thanksgiving Day. 626/395-6330, Tara Tram or taratram@caltech.edu.

LAKE ARROWHEAD HOUSE or condo, 3 bd., to rent from Aug. 3-10, 2002. 626/405-0220.

SHOPPERS, Elks Ladies will sponsor "Shop Till You Drop", Nov. 28, 5:30-8 p.m., Arcadia Elks Lodge, 27 W. Huntington Dr., free admission, latest winter / Christmas fashions from Nordstrom's, Macy's, Robinson's-May, Bloom-ingdale's; 50-70% off store prices, sizes 4-24; new girls' dresses, accessories; proceeds donated to disabled children in CA and Hawaii. 626/447-2025.

SPACE INFORMATION/memorabilia from U.S. & other countries, past & present. 790-8523, Marc Rayman.

VOLLEYBALL PLAYERS, coed, no beginners please, Tuesday nights 8-10 at Eagle Rock High School, \$3/night. 956-1744, Barbara.

Free

KITTEN, black and white, wandered into our yard and never left, spayed female, all shots, healthy, no fleas, ~6 mo. old. 626/287-9433.

KITTENS, black tuxedo silver striped tabby to good home, healthy, friendly, and disease-free, pictures at seal_68@yahoo.com. 249-8611, Jerry or Carole.

SINKS, blue bathroom or small kitchen. 626/794-0081, Bonnie.

WASHER/DRYER, Maytag, both older models, dryer works great, washer tub is unbalanced

and we will probably send to trash soon, take one or both. 790-3854.

For Rent

ALTADENA house, 1 mile from JPL, 2 bd., beautiful hardwood floors, wood-burning fireplace, French doors, remodeled kitchen and bathroom, dishwasher, a/c, washer/dryer negotiable, detached 2-car garage, gated back yard with patio, \$1,400. 626/791-7081.

ALTADENA, room in Rubio Canyon area, private residence, kitchen & laundry OK, no smoking, no pets, \$400. 626/797-8082.

ALTADENA, full-furn. rm., full house privileges including washer and dryer, separate phone line, but all other util. included, female preferred, \$400. 626/798-2112.

GLENDALe, studio apt. attached to home, 1 ba., separate kitchen, nice safe neighborhood, walking distance from Galleria, 8 mi. from JPL, no pets, \$585 plus electric and gas, water included. 323/256-0535.

LA CRESCENTA, 1-bd. guesthouse, priv. entr. & parking, patio/garden, fridge, laundry, cent. a/c, full bath, quiet safe neighborhood, no smoking/pets, single person only, basic cable/utills. included, credit check, \$695. 957-2173.

MONROVIA, 1-bd. guest house plus large bonus building with hookups; very private, clean and quiet; water, trash and gardener included; avail. Nov. 15; \$750. 626/357-6955.

MONTROSE, large 2 bd., 2 full ba., townhome, 2-car garage, near JPL, 2735 Piedmont Ave, \$1,200. 800/205-5009, x222.

PASADENA, 5 minutes from Caltech, 1 bd. with private ba., available in new 2 bd., 2.5 ba., duplex townhome, garage, patio, new carpet, fireplace, \$650. 626/796-8709.

SOUTH PASADENA, unfurn. bedroom in 2-bd. apt., share ba. w/professional, female roommate; rest of place is furnished, cat, quiet and convenient location, 10 min. to JPL, no smoking, no deposit, \$525, utilities included. 626/379-0967, Naz.

Real Estate

ALTADENA, extremely charming, Tudor-style house, 3 bd., 1.75 ba., beautiful h/w floors, 1,272 sq. ft., detached 1-car gar., 5,200 sq. ft. lot., built 1927, vg shape, bolted, 4.5 mi. to JPL, pics at www.ktb.net/~alexm/house.html, \$265K. 626/794-9874.

EAGLE ROCK, historic ridgetop home, incredible views, 7 mi. to JPL, 1 bd., den can be extra bd., 1.75 ba., secluded park-like setting on 16,200 sq. ft. double lot, 1,100 sq. ft + 400 sq. ft. detached studio w/balcony, + 400 sq. ft. basement, 2-car gar., 4 patios, oak floors, cent. a/c, rock t/p, \$357,000. 323/550-8701.

LANCASTER home, 4 bd., 2.5 ba., 1,700 sq. ft., 3-car garage, new carpet, tiled kitchen & baths, fully landscaped w/auto sprinklers, 9,000 sq. ft. lot, RV-access potential, wood moldings and blinds, ceiling fans, safe and quiet neighborhood, JPL vanpool area, \$136,500. 661/940-5890.

PARK CITY, Utah timeshare, 1 bd., 1 ba., one floating week/year, 2001 not used yet, exchange at other resorts (RCI): pool, exercise facilities, sauna, fireplace, great skiing; orig. price \$8,000, sell \$3,000. 790-7934, eves.

PASADENA, executive condo next to Caltech, totally remodeled 2 bd., +1.75 ba., 1,200 sq. ft., newly refinished hardwood floors in dining room, newer appliances, carpet & paint, large balcony, just redone, overlooking beautiful trees, top floor unit in park-like setting, walk to Caltech & S. Lake Ave, nice pool and spa, \$259K. 626/585-9048.

Vacation Rentals

BIG BEAR LAKEFRONT, luxury townhome, 2 decks, tennis, pool/spa, beautiful master bd. suite, sleeps 6. 949/786-6548.

CAMBRIA, ocean front house, sleeps up to 4, excellent view. 248-8853.

HAWAII, Maui condo, NW coast, on beach w/ocean view, 25 ft. fr. surf, 1 bd. w/loft, compl. furn., phone, color TV, VCR, microwave, d/w, pool, priv. lanai, slps. 4, 4/15-12/14 \$105/nite/2, 12/15-4/14 \$120/nite/2, \$15/nite/add'l person. 949/348-8047.

MAMMOTH, Chamonix condo, at lifts 7, 8, 16, 17, walk to Canyon Lodge; 2 bd., 2 full ba., sleeps 6, fully equipped edc. kitchen, w/microwave & extras, t/p and wood, color TV, cable FM stereo, newly redecorated and refurbished, VCR, o/d Jacuzzi's; sauna, game, rec. & Indry rms.; conv. to shops, lifts, special events; daily/weekly rates, special midweek rates. 249-8524.

MAMMOTH, Courchevel, fully equipped unit 2 bd., 2 ba., sleeps 6, short walk to Canyon Lodge and ski lifts, available for Thanksgiving weekend. 661/255-7958.

MAMMOTH, Snowcreek, 2 bd., 2 ba., + loft, sleeps 6-8, fully equipped kitchen incl. microwave, D/W, pool, priv. lanai, slps. 4, 4/15-12/14 \$105/nite/2, 12/15-4/14 \$120/nite/2, \$15/nite/add'l person. 949/348-8047.

OCEANSIDE, on the sand, charming 1 bd. condo, panoramic view, walk to pier & harbor, pool/spa, game rm., sleeps 4. 949/786-6548.

OCEANSIDE condo, fully furnished, 2 bd., 2 ba., fireplace, full kitchen, quiet, relaxing, in beautiful setting, located at beachside, with barbecue, pool, spa, game room, and great ocean view, easy walk to pier and restaurants, sleeps 6, weekly or monthly. 909/981-7492, Darlene or dhaughe@yahoo.com.

PALM DESERT, exquisite, 2 bd., 2 ba. villa, approx. 1,500 sq. ft, for vacation or long term, newly remodeled, with sky light, patio & 2-car garage, conveniently located across from the Living Desert, great private, secure resort, with tennis courts, pool, spas and clubhouse facilities. 909/620-1364.